

## PROCEEDINGS

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NANNOSQUILLA ANOMALA, A NEW STOMATOPOD  
CRUSTACEAN FROM CALIFORNIA

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The species described below was first brought to my attention in 1965 when John S. Garth, Allan Hancock Foundation, forwarded five specimens to me which had been collected off San Clemente Island by Earl E. Ebert. A second series of specimens from the same area was received from Charles H. Turner of the California Department of Fish and Game. It was my intention to include an account of this species in a review of the eastern Pacific stomatopods, but delays in the progress of that study lead me to publish a preliminary account of the species at this time.

All measurements are in mm. Total length (TL) and carapace length (CL) are both measured on the midline. The holotype and a series of paratypes have been deposited in the Allan Hancock Foundation (AHF); a series of paratypes is in the U. S. National Museum (USNM).

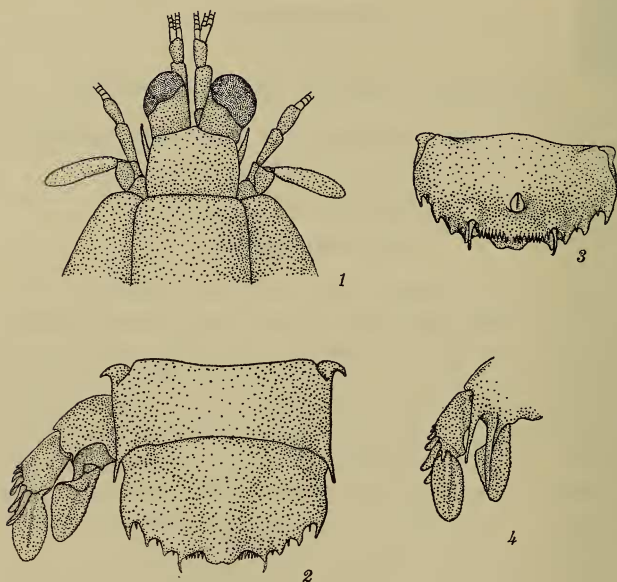
I thank Earl E. Ebert, Charles H. Turner, and John S. Garth for making these specimens available for study. The illustrations were prepared by my wife Lilly, with the support of the Smithsonian Institution through its Research Awards Program.

***Nannosquilla anomala* new species**

Figs. 1-4

*Holotype*: 1 ♂, TL 36.4; Northwest Harbor, San Clemente Island, California; 15 ft; 22 June 1965; AHF.

*Paratypes*: 3 ♀ (2 broken, CL 5.8-6.5), TL 41.2; data as for holotype; AHF.—1 ♀, TL 34.0; same; USNM 120331.—3 broken ♂, CL 5.3-6.7; 2 broken ♀, CL 5.4-5.5; Wilson's Cove, San Clemente Island, California; sand, 25-70 ft; 25 October 1966; USNM 120330.



FIGS. 1-4. *Nannosquilla anomala*. 1, male paratype, CL 5.4, anterior portion of body. 2-4, female paratype, TL 34.0: 2, last abdominal somite, telson, and uropod; 3, ventral surface of telson; 4, ventral view of uropod (setae omitted in all figures).

*Description:* Eye small, not extending beyond end of antennular peduncle; cornea set obliquely on stalk, overhanging stalk laterally; ocular scales small, fused along midline.

Antennular peduncle short, but more than half as long as carapace; dorsal processes of antennular somite visible in dorsal view as anteriorly directed spines lateral to rostral plate.

Antennal scales small, less than one-third as long as carapace; antennal peduncle not extending beyond eye; antennal papillae absent.

Rostral plate broader than long, subquadrate or pentagonal; lateral margins straight or convex; anterolateral angles obtuse, rounded; anterior margin straight or with obtuse apical prominence.

Dactylus of claw with 10-14 teeth, outer margin of dactylus rounded, with proximal basal notch flanked proximally and distally by small lobe; dorsal ridge of carpus terminating in single spine.

Mandibular palp absent; 4 epipods present.

Sixth abdominal somite with slender posterolateral spines.

Telson broader than long; false eave with broad median projection, medially emarginate, overhanging submedian denticles; four lateral projections present on either side of midline, second obtuse, fourth spinous; submedian projections above marginal armature, outer three projections on margin proper; marginal armature consisting of, on either side of midline, a row of 7-10 slender, fixed, submedian denticles, outermost curving ventrally, 1 movable submedian tooth, and 3 fixed denticles, 1 between each of the four fixed posterior projections.

Outer margin of proximal segment of uropodal exopod with 5-7 movable, spatulate spines, last short, not extending beyond midlength of distal segment; inner distal lobe of proximal segment of exopod with 3-5 slender, non-plumose setae; inner spine of basal prolongation longer than outer.

*Color:* Body covered with dark chromatophores, aggregated along midline in some specimens; eyestalks with large black chromatophores; each gastric groove with a dark spot near anterior margin of carapace; anterior portion of carapace and anterior appendages darker than dorsum of body; lateral margin of sixth abdominal somite and all but median margin of telson black; margin of proximal segment of uropod black.

*Size:* TL 34.0-41.2 mm. Most specimens damaged, CL ranging from 5.3-7.0 mm. Other measurements of male holotype, TL 36.4: carapace length, 6.0; rostral plate length, width, 1.5, 2.3; telson length, width, 3.3, 5.3.

*Name:* The name is from the Greek, *anomala*, irregular or abnormal, referring to variation in the shape of the rostral plate.

*Discussion:* *N. anomala* is the fourth species of *Nannosquilla* recorded from the eastern Pacific. Both *N. californiensis* (Manning, 1961) from the Gulf of California and *N. decemspinosa* (Rathbun, 1910) from Peru and Costa Rica have acute anterolateral angles on the rostral plate. *N. californiensis* has more projections on the false eave of the telson, whereas in *N. decemspinosa* the eave is not subdivided. *N. chilensis* (Dahl, 1954), from Chile, also has rounded anterolateral angles on the rostral plate, but the plate is much broader in the southern species which also differs in having the false eave almost entire and in having subequal spines on the basal prolongation of the uropod.

*Remarks:* Ebert informed Garth that the specimens collected by him were found in vertical burrows, 4 to 6 per square meter, adjacent to kelp beds. The burrows, mucoid lined with packed sand grains, were 10 inches deep and one-half inch wide. The entrances to the burrows lacked shelly debris. Eggs were found in some of the burrows; solitary eggs in the jar with the first lot were 0.8 mm in diameter. Turner found an amphipod, *Ampelisca cristata* Holmes, living with the stomatopods,

and noted that they were of the same general color as the *Nannosquilla*. A note on the biology and life history of *N. anomala* is being prepared by Turner and his co-workers.